Laboratory 9
Querying XML documents with XPath and XQuery

It is expected that you do Homework 10 before implementation of the tasks included in Laboratory 9.

This laboratory consists of 2 tasks.

Download and unzip a file `scripts9.zip`. Read and make yourself familiar with the contents XML document included in file `cataloge.xml` downloaded from the website.

Start SQL*Plus client on Windows system and connect to Oracle server running on the same system.

Execute the following scripts:

(1) `xcreate.sql`
(2) `xload.sql` with two parameters: `the-full-path` `catalogue.xml`.

Task 1 Querying XML documents with XPath

Implement and test the following queries in XPath query language.

(1) Find the names of all publishers.
(2) Find the values of all leaf level nodes describing authors.
(3) Find the values of all attributes.
(4) Find all character data in the document.
(5) Find all prices that have attribute currency.
(6) Find the titles of all books that have a name of publisher.
(7) Find the prices that have a value of attribute currency equal to `AU$`.
(8) Find the titles of all books whose author is `James Bond`.
(9) Find identifiers of all books described by a keyword `.NET`.
(10) Find the titles of all books that have no publisher.

You can use the scripts `xcreate.sql`, `xload.sql`, `xlist.sql`, `xpath.sql`, `fxpath`.sql to set up an environment and to compute XPath queries. **Remember, that you must use SQL*Plus client installed on Windows system to execute the scripts !**

When ready save XPath queries in the files `task1-1.xp`, `task1-2.xp`, `task1-3.xp`, `task1-4.xp`, `task1-5.xp`, `task1-6.xp`, `task1-7.xp`, `task1-8.xp`, `task1-9.xp`, `task1-10.xp`.

The files `task1-*.xp` will be submitted at the end of laboratory class.

Task 2 Querying XML documents with XQuery

Read and make yourself familiar with the contents XML document included in file `cataloge.xml` downloaded at the beginning of implementation of task 1.

Implement and test the following queries in XQuery query language.

(1) *Find the titles and the prices of all books and order the results by ascending titles.*
(2) *List the titles and publication dates of all books written by* `James Bond`*.*
(3) *Find the identifiers of all books indexed by a keyword* `Java`*.*
(4) *Find the identifiers of all books not indexed by a keyword* `Java`*.*
(5) *Find the titles and the authors of all books that have more than one author.*
(6) *Find the titles and publishers of all books published by a publisher of a book entitled* `Maeve Ascendant`*.*
(7) *Find the titles and publishers of all books published by a publisher of a book entitled* `Maeve Ascendant`*. Do not list a title* `Maeve Ascendant`*.*
(8) *Find the total number of authors for each book. List book title and the total number of authors for each book.*
(9) *Find the total number of books published by each publisher. List a publisher and the total number of books published.*
(10) *List the publishers that published more than one book.*

You can use the scripts `xcreate.sql`, `xload.sql`, `xlist.sql`, `fxquery.sql` to set up an environment and to compute XQuery queries. **Remember, that you must use SQL*Plus client installed on XP system to execute the scripts !**

When ready save XQuery queries in the files `task2-1.xq`, `task2-2.xq`, `task2-3.xq`, `task2-4.xq`, `task2-5.xq`, `task2-6.xq`, `task2-7.xq`, `task2-8.xq`, `task2-9.xq`, `task2-10.xq`.

The files `task2-*.xq` will be submitted at the end of laboratory class.

Submission

Zip the files `task1-*.xp` and `task2-*.xq` obtained as the solutions of Task 1 and Task 2 into a file `solutions9.zip` and submit the file through Moodle. A submission procedure is the following.

(1) Connect to eLearning.
(2) Navigate to a folder `SUBMISSIONS`→`LABORATORY SUBMISSIONS`.
(3) Click at `LABORATORY 9, Submit your solutions here` link.
(4) Click at `Add Attachments` button.
(5) Navigate to a location where a file `solutions9.zip` has been saved.
(6) Select the file and click at `Open` button.
(7) Click at `Submit` button.
(8) Click at `OK` button to return to `Home Page`.

End of laboratory 9